

Removing & Storing

Once the cart has re-cued, the red stop light on the Stop button will flash on and off. To remove the cart from the machine, grip the outer edges and carefully pull toward yourself until it is free of the machine. Return carts to the rack immediately, and never leave one sitting on top of the cart machine. Magnetic fields and heat are tape's number one enemies, and all tape recorders produce both.

CASSETTE PLAYER

The studio is equipped with two cassette tape machines, one for on-air play, the other for recording purposes. The Play Deck, located above the Control Board, is replaced more frequently than other studio equipment and may be either a regular or dubbing (two door) model. In the case of a dubbing deck, either side may be used to airplay although only one tape can be played at a time, making it impossible to play cassettes back-to-back without a pause in between.

Cueing Cassettes for Airplay

1. Open the deck's door using the Eject button. Place the cassette in the deck, making sure that the side desired is facing out and the open end is pointing down. Close the door carefully, switch Pot-7 to P-1, and set the pot's volume control in the Cue position.
2. Press the Play button and then use Fast Forward (FF) or Re-wind (REW), stopping occasionally to use Play to check your position on the tape.
3. When you reach the selection you want, press the Stop button, then re-wind to just before the selection's first note. You may have to go back and forth a few times until you're certain the tape is in the right position. It is often helpful to "zero" the Tape Counter to assist in your search.
4. Once you're sure the tape is positioned before the first note, remove the cassette from the deck and re-wind the tape manually one-quarter turn, using either your fingertip or a pencil to turn the tape sprocket (don't touch the tape itself). This provides enough "leader" to allow the deck to reach full speed before the tape plays. Then return the cassette to the machine.
5. To set up the deck for air-play, press Pause and then Play. To play the tape, release the Pause button. Using the Play button by itself is alright, except that Pause makes less of clicking noise, which is important when the microphone is open. One disadvantage of the Pause-Play start-up is that the tape heads remain in contact with the tape, so don't leave a tape in Pause for a long period of time.

Tape Settings & Dolby

There are individual settings for playing different types of cassettes: Normal, CRO2, and Metal. Use the settings called for with the particular tape you are using. In regards to Dolby noise reduction, tapes recorded with Dolby should be

replayed without using noise reduction, otherwise the output might sound muffled (simply put, don't double the Dolby). Not everyone agrees on this, however, so you may want to preview the tape in P-2 to see how it sounds over the monitors.

CASSETTE RECORDER

An excellent way to improve your on-air techniques is to tape your programs and critique them later. The studio's Tascam Record Deck, in the column to the right of the Control Board, may be used for this purpose.

Recording a Cassette

1. Insert a blank cassette, close the door, and re-wind to the start position if necessary. Then hold the Record button and press Play. The tape will begin moving, and the red indicator will light up to show that you are in Record mode. Watch the clear plastic "leader" and as soon as the dark-coated tape approaches the deck's tape heads, press the Pause button to stop the tape until you are ready to record. (See "Tape Settings" below.)
2. With the player in Record-Pause and the Tape Select in Source (as opposed to Tape), set the Tape Input Volume controls, monitoring the sound level on the recorder's VU meters. Adjust the volume so that the meter's indicator needles hit the lower portion of the red area but do not "red-line" constantly, otherwise the tape will sound distorted. Also, the Tascam is equipped so that you only have to turn either the Right or Left volume control; the other will turn by itself.
3. When you are ready to Record, press the Play button. You may interrupt the recording at any point by pressing either Stop or Pause. To re-start from Pause, simply press Play. If you have used Stop, you must hold the Record button and press Play.

If you are picking up a recording in mid-broadcast, you may want to fade in the music at the beginning of the tape by slowly turning the volume input controls from zero to the proper recording level, once the tape (as opposed to the plastic "leader") reaches the tape heads. After one side of the tape has recorded completely, the machine will stop automatically. At that point, flip the tape over and repeat the above procedures to record on the other side. You will not have to re-adjust the input volume, unless you intend to fade in the sound at the start of the tape.

Tape Settings

The cassette recorder is equipped with additional features to assure optimum recording quality. Included are Dolby noise reduction and individual settings for Normal, CRO2, and Metal tapes. Be sure these settings, found on the far right of the machine, are in the proper positions before you start recording. Check your cassette case for the recommended setting. Also be sure to check the Dolby setting, selecting the choice compatible with your playback equipment and preferences.

COMPACT DISC PLAYER

There are two Compact Disc Players in the FM Studio: an ADC 16/2R and a Denon DCD-500. The operations for the two players are nearly identical, although most of the operating controls are in different locations. The major differences between the two machines are that Denon searches for selections faster than the ADC and also that the the Pause button on the Denon enables a quicker start-up time once the Play button has been pressed (Pause on the ADC does not affect the cue time).

Playing a Compact Disc

1. Turn on the player by pressing the Power control button. The Power controls on both decks are on the lower left hand side.
2. Press the button marked Open-Close to release the Compact Disc Pad. Place the CD on the Pad with the label facing up. Push the Open-Close button again to load the machine.
3. Press the Track button the desired number of times until you reach the selection you wish to play. The LCD display panel will provide a read out of both the current track number and its play time. On the Denon, as soon as you have reached your selection, press Pause for a quicker cue.
4. The ADC (on the left) runs through Pot-7, while the Denon (on the right) is on Pot-8. Set the volume control for the appropriate pot between 5 and 6. Press Play and monitor the sound levels on the VU meters.
5. After a selection has played, you must press Stop or the disc will continue to play. To remove the disc from the machine, press the Open-Close button and lift the CD from the Pad. Return the disc to its case immediately.

Handling Compact Discs

Contrary to popular (or unpopular) belief, compact discs can produce pops, hiss, skips and jumps if they were manufactured improperly or if they are mis-handled. Although we can't do anything about quality control in manufacturing, we can preserve the lives of our CD's by handling them properly.

1. Never touch the bottom (or "clean") side of a CD. This is the portion of the disc where the sound is encoded. Fingerprints, scratches and dirt on this side can affect the sound quality and operation of a disc.
2. For optimum results, always handle a CD by its outside edges. And always return discs to their cases after removing them from the machine.

REEL-TO-REEL TAPE DECKS

The FM Studio has a Technics 1520 reel-to-reel stereo tape deck with 2-track recording and 2 or 4-track playback capabilities, while the Production Studio has a Tascam 22-2 deck with 2-track recording and playback.

Tape Speeds

Both decks are equipped with High (15 inches per second) and Normal (7-1/2 ips) speed controls, while the Technics has an additional setting for 3-3/4 ips. High speed provides better recording quality as well as faster dubbing, although it requires twice as much tape. Most pre-recorded tapes run at 7-1/2 ips.

Threading Tape

Diagrams for threading the reel-to-reels are posted near the Technics and on the side of the Tascam. The threading configurations are different for each machine, but otherwise the operations are fairly similar. To thread the tape:

1. Turn on the deck by pressing the Power button. Make sure the Record Mode switch is off, otherwise you could erase the tape.
2. Mount the tape on the left reel, locking it in place by pulling the spindle out and turning it 1/4 turn. Place take-up reel on the right and lock it.
3. Manually turning the reel on the left, pull off about 2 feet of tape (or "leader") and thread it according to the diagram.
4. After threading the tape, tuck the end of the tape into the slot in the hub of the take-up reel. Then turn the take-up reel manually until there is enough tension to engage the automatic shut-off posts into play position.

Setting Volume Levels

When playing any tape deck (cassette or reel-to-reel) equipped with an Output Volume, the output level should be set at maximum volume, position 10. The volume level should then be set on the Board. See VU Meters, page 12-13, and Auditioning in P-2, page 25, for more information on setting levels.

Cueing a Tape for Playback

1. Set the Monitor controls in Tape position (as opposed to Source).
2. In the FM Studio, set the Program Switch for Pot-6 in P-1 (to the left) and set the Channel switch for Pot-6 in B position. In the Production Studio, the reel-to-reel runs through Pot-8, Channel A. Place pot volume in Cue.
3. Press Play and allow the tape to run until it reaches the recorded material. Immediately press Stop and re-set the tape counter button to "zero."

4. Manually re-wind the tape by turning the two reels simultaneously clockwise until you reach 999 on the counter (just past zero). Do not try to re-wind by turning just the left reel, as this will stretch or tear the tape.

Playing the Tape

1. Once the tape is cued, take the Program Switch out of Cue.
2. When you are ready to play the tape, press Play on the deck and adjust the volume on the Board. Be sure the Board's VU Meters are between 80 and 100%.
3. When the taped material ends, turn down the volume control. Stop and re-wind the tape. Then return the tape to the box.

"Tails Out" Tapes

Most tapes are wound so that they can be played immediately by mounting them on the left and then threading them onto the take-up reel on the right. However, some tapes are received "tails out", that is, with the beginning of the tape on the inner hub. These tapes must be re-wound by placing the loaded reel on the right side. After threading the tape to the take-up reel on the left, press the Re-wind button and wait for the tape to approach the end (actually the start). At this point, stop the tape and follow cueing and playback as outlined above.

MICROPHONE & ANNOUNCING

Operating the Microphone

The FM Studio is equipped with an RE-20 Electrovoice Professional Studio microphone. To use the mic:

1. Place the switch for Pot-1 into P-1 (Program-1) with the pot's volume control turned all the way down but just above Cue.
2. When ready to speak, turn up the volume to between 5 and 6. Glance at the VU Meters occasionally to make sure the sound level is between 80 and 100 and adjust the volume accordingly.
3. After announcing, turn down the volume all the way. Then switch the pot control from P-1 to the center or neutral setting.

This is the only proper procedure for operating the microphone. For example, keeping the volume control up and then switching into P-1 results in a clicking noise, the sound of the switch being picked up by the microphone. Another alternative, keeping the volume up with the microphone on, "forces" the processing equipment to boost what the microphone is picking up, which means any sound in the studio, however small, will be broadcast. We point out these examples because many announcers get into a lifetime habit of operating the microphone the wrong way.

Some Tips on Using the Microphone

The microphone is very sensitive. For optimum voice reproduction, a speaking distance of 3-6 inches is recommended. Some additional tips:

1. Positioning the mic too closely accentuates the "pops" caused by "p's" and the "s-s-s's" of sibilant letters, while a greater distance "increases" the size of the room, producing a hollow sound, much like the echo in a cave. You can avoid picking up other "mouth" sounds by angling the microphone slightly and speaking past, instead of directly into, the mic.
2. Do not adjust or bump the microphone while announcing and never tap the console counter; even the slightest sounds will be picked up. For the same reason, sit as still as possible when using the microphone. Besides the fact that our chair sometimes squeaks, moving your head around changes the speaking distance, resulting in fluctuations in the sound level.
3. Keep the studio door closed when you intend to announce, not only to keep others out but also to avoid picking up outside sounds.
4. Prevent the leading cause of microphone mortality: Never blow into a microphone to test it.

Announcing with Background Music

When using the microphone while a recorded source is playing, the studio's processing equipment automatically lowers the volume of the background source, mixing the two signals together in proportion to their sound levels. Keeping the mic at the same level as the background source gives equal emphasis to the two sources (50% each), resulting in a "fight" between your announcing and the music. Similarly, if you turn down the background too far, the processor will have to work overtime during pauses to boost the music to the 80-100% level.

For best results, slowly reduce the volume of the background source by about 30% (e.g., down to 4 if it was set at 6), switch the microphone's pot to P-1 and turn up the mic to the volume level you normally use for announcing. Then when you speak, the background level will drop, achieving a balance of about 60% voice and 40% music. During pauses, the processor will compensate by boosting the background, thereby maintaining a consistent sound level. Once you are finished speaking, turn down the mic volume, switch off the mic, and gradually "pot up" the background source to the normal setting.

Headphones

When the Pot-1 switch is placed in P-1, the studio monitors automatically shut off, which means you have to use the headphones to hear the programming in progress. Although it is somewhat disconcerting at first to hear yourself over the headphones, you will find that the instant feedback will help you learn how to gain control your voice and find the tone and style that work best for you. The headphones also make it easier for you to hear what listeners are hearing and thus are valuable mixing music and other material.

Announcing Techniques

It takes considerable practice and experience to "sound like a pro." But don't let this put you off---we're not trying to be typical FM announcers. Instead, we try to establish a rapport with the audience by using a more personal, conversational tone. Even though your listeners are not in the room with you, you are in the room with them. So avoid creating an artificial distance by being formal or acting important. Be yourself.

For best results, it is recommended that you speak slightly lower than usual (unless you already have a deep voice) and that you pronounce words more distinctly by talking somewhat slower. In either case, do not exaggerate---try to sound "natural." And practice your diction. In normal conversation, most people slur their words without noticing it. One technique for announcing properly is to say each word individually, leaving a slight separation between words and the proper pauses between phrases. Avoid sounding like a human machine gun. However...don't...sound...like...this...either. Also, remember that radio requires additional information to compensate for the fact that the audience cannot see you. Fill in the picture in the listener's mind by emoting more than usual. Loosen up---sound humorous if your material calls for it. And be serious when it is appropriate to the situation, such as when reading the news or public service announcements.

Stage fright strikes even the most seasoned professional, so don't feel you are the only one who gets the jitters. With time, announcing will become as natural as talking to your friends, which is who your listeners are anyway. If you become nervous, breathing exercises are one way to relax before opening the mic. And if you need to catch your breath while announcing, simply turn the pot all the way down, exhale, and take in a slow, deep breath before increasing the volume. Then pick up where you left off. Listeners, if they notice at all, will think the moment of dead air was a dramatic pause.

On-Air Light

Besides shutting off the monitors, turning on the microphone also activates the On-Air Light outside the studio to warn others that they should not enter. As for visitors in the studio with you, they generally get the point when the monitors cut out, although it is a good practice to say "stand by" before opening the mic to warn people you are about to go on the air.

THE TELEPHONE

The studio's telephone is an integral part of the station's equipment, for it is here that listeners can come in direct contact with station personnel. The impressions they get over the telephone are lasting ones. Consequently, there are several important considerations when dealing with callers:

1. Answer all calls promptly and courteously. However, never let a telephone call interfere with your duties at the Control Board.

2. Avoid alienating callers. You never know who might be on the other end of the line (the FCC, a college official, an underwriter, etc.)
3. For security reasons, do not give out information about the studio's location, equipment, operations, or personnel.
4. Never provide information you're uncertain about. Instead, suggest some other source where the caller can find the desired information (the telephone book, a local library, the daily newspaper, Ticketron, City Hall, the National Weather Service, etc.)
5. When giving the station's telephone number over the air, use only the studio number---433-5957. Do not announce the office number, although you may provide it over the telephone to people calling on station business.
6. If a caller asks you to make an announcement regarding an event or a cancellation, tell them you do not have the authority to broadcast information without clearance (the call could be a hoax). Take the caller's information and telephone number, and refer the matter to the appropriate staff member.
7. If you receive a complaint from a listener, do not waste your time arguing. Your energy will be better spent concentrating on your program. Simply assure the caller the problem will be resolved. If that doesn't work, tell the person you will refer the matter to the station's management. Make a note of the caller's name, telephone number and the nature of the complaint, then pass the message on to the appropriate staff member.
8. Complaints about Channel 6 television interference must be recorded for our files. Write down the caller's name and telephone number, the time and date of the call, and a brief description of the problem. Tell the caller the General Manager will get back to them as soon as possible. Be sure to post the message on the door to the Office.

Music Requests

Our policy regarding requests is that we try to honor suggestions from listeners but only if their requests are appropriate to the format of the program and the programmer's desires. Never break format and never play a request you feel is incompatible with the directions your program has been taking. On the other hand, try to accommodate callers whenever possible.

If a requested selection does not fit into what you have been playing, suggest an alternative, either by the same artist or some other selection that may satisfy the caller. If the request is totally out of format, suggest that the person call back during a program on the station's schedule where the request might fit in. In all cases, be as courteous as possible, even to someone who obviously hasn't been paying attention to what you've been playing.

Dedications

It is our policy not to announce dedications on the air. For the most part, a dedication is a private communication between listeners and their friends. The telephone is a much more appropriate medium for someone to let a friend know that the song being played on WMUH was requested in their honor. This also applies to people who call to request a dedication to "the third shift at McBurger's." This type of dedication could be an attempt to get a free commercial plug on the air. Politely tell the caller it is against station policy to announce dedications. Remember, as the operator on-duty, you are responsible to all of your listeners, not only to those who call in.

MUSIC LIBRARY & ALBUMS

WMUH has an outstanding music library of more than 8,000 rock albums, 3,000 jazz recordings, 2,000 classical music albums, 1,000 folk albums, and 2,000 additional selections in miscellaneous categories such as comedy, showtunes, reggae, and blues. Quite a few of these albums have been with us since WMUH's beginnings in the 1960's, while others pre-date this, thanks to the generosity of students and community members who have contributed recordings to make our collection one of the finest in the Lehigh Valley.

If you use the library regularly, you will gain an excellent background in recorded music, new and old. Certainly there are gaps. Many albums are gone because of theft, some are badly damaged from overuse and mis-use, and others are missing because they were never received from recording companies. Nonetheless, the library offers a wealth of material for doing programs and exploring the possibilities of music and radio. We ask that you treat our collection with the utmost care and respect. It's a resource we hope to preserve for generations of programmers---and listeners---to come.

Cleaning Albums

All albums should be cleaned before playing, especially new albums, which often have surface debris left over from the pressing process. For cleaning purposes, a Discwasher brush is kept next to the turntables, along with a supply of cleaning fluid. For best results:

1. Run a small bead of fluid over the edge of the brush indicated by the arrow on the wooden handle. Rub the bottom edge of the fluid bottle over the liquid (do not use your finger) so it soaks into the brush evenly.
2. Hold the brush's damp edge lightly on the surface of the album as it spins on the turntable (the tonearm should not be in use).
3. On the second or third revolution slowly begin to tilt the brush so that the dry middle and back edges can absorb the moisture and dust. A final, quick lifting motion should pick up the remaining line of dust. If not, remove all dirt from the brush using the red plastic cleaning brush (don't touch the bristle surfaces of either brush with your hands) and repeat the procedure. Additional liquid may not be necessary.

4. After cleaning, allow a few seconds for any excess moisture to evaporate before cueing or playing the record.

Handling Albums

If the following procedures are not part of your routine for handling your own albums, learn them now. Otherwise, you're just wasting your money. While you may not care how your records sound at home, they are useless for doing programs if they are scratched or covered with fingerprints. As for the station's records, many have already been damaged beyond use.

1. When handling an album, it is important to hold it only by the extreme edges. Avoid touching any part of the surface. Slide the record out of the sleeve so the edge rests on the palm of your hand and you can balance it with one finger touching the center hole. Then use two hands to place the record on the turntable, holding it with your palms and fingers on the outermost edges.
2. Return records to their sleeves and covers immediately after use. If an album doesn't have an inner sleeve, get one from the extra supply kept in the studio. Album covers should also be handled with care---they help protect the life of the record.
3. All albums must be re-filed at the end of your shift. Develop a system for removing albums from the racks so that you can return them to their proper location in the alphabet. A good practice is to pull out the album to the immediate left of the one you selected, allowing it to extend a few inches over the edge of the shelf. Later, filing the album you've used by sliding it into the rack to the right of your marker.
4. Do not jam albums into a rack that is overcrowded. You can make space by re-distributing albums to the right or left of the filled racks, depending on whether the bins fall under the same letter of the alphabet
5. Please do not take albums from the studio. Everyone is hurt when albums are borrowed or stolen---programmers, listeners, the station, and the artist. Anyone caught removing albums from the studio will be expelled from the association permanently and could also face criminal prosecution.

Cueing a Record

1. Place the record on the turntable, making sure the appropriate pot (Pot 3 for the left turntable and Pot 4 for the right turntable) is set in P-1 and the volume is in Cue, the lowest possible position.
2. After cleaning the album, place the stylus as close as possible to a point before the start of the selection you wish to play. To avoid scratching albums, use the cueing mechanism to lower the tonearm.
3. Start the turntable and press stop as soon as you hear the first note of the selection on the cue speaker. You may want to turn down the volume of the

Monitor Control so you can hear the cued material over what is being broadcast. Remember, a source in Cue does not play over the air.

4. Place your finger on the dotted edge of the turntable (not on the record) and slowly turn the platter backwards until you reach the first note. Then reverse the turntable another half turn. This will allow enough start-up time for the turntable to reach full speed before playing the first note.

Potting Up a Selection

Basically, there are two ways to pot up the volume for airplay. The first is to turn up the volume after cueing, making sure the pot's switch is in P-1. Then when it's time to play the next selection, simply press the turntable's start button and turn down the pot for the previous source. You may want to turn down the microphone volume first, if that's the source in use, so that listeners can't hear the sounds of buttons being pushed or the chair being moved as you reach for the turntable.

Another method is to take the source out of Cue after cueing up, leaving the volume at its lowest setting (again, make sure the pot switch is in P-1). When you want to play your selection, start the turntable, pot up the volume quickly depending on the mix, and then turn down the volume for the other source.

Although this second procedure is slightly more complicated, it offers several important advantages over potting up ahead of time: Once the habit is developed, you'll avoid getting stuck starting a record while it is still in the Cue mode (this happens to most operators at one time or another). Since you already have your hand on the pot, you will be able to adjust the volume quickly if the sound level is too high or too low, giving you better control over the mix. You reduce the possibility of turning down the pot in use, instead of the one for the source that just finished playing. You also eliminate "rumble" picked up from the turntable when it starts moving, and you prevent listeners from hearing the grinding start-up of selections that are cued too tightly. Most important, you spare your audience the opportunity of sharing in your misfortune should you bump a turntable with a selection cued and the volume already turned up.

Auditioning in P-2

Another procedure for cueing records is to use P-2 for auditioning, which allows you to preview over either the headphone or studio monitor, instead of the cue speaker. To audition with P-2:

1. Place the control switch above the turntable pot into P-2 and select P-2 on either the Phone or Monitor Control knobs (upper left of Control Board). Switching the Monitor Control to P-2, turns off the speakers for your on-air source but does not affect the material being broadcast.
2. Follow normal cueing procedures, except for the fact that you can use the pot's volume control to turn up the sound. A source in P-2 will not go out over the air.

3. After a selection is cued, be sure to return the settings affected to P-1.

The advantages of this method are that you can hear the material better over the monitors and also can check the volume level of a recording on the VU Meters (select P-2 on the knob below the meters). The disadvantage of using P-2 for cueing is that it requires changing several additional settings.

Other Cueing Techniques

The above procedures apply to cueing and setting the volume for materials on other sources (cassettes, CD's, carts, etc.). In addition, there are other techniques for cueing and mixing material, such as "slip cueing" on the turntable, back-timing material so that you can announce over the instrumental intros to certain music selections (not over classical music, please), or using the pot switch to "pop" in a source with the volume already set. These take more practice, however, and should be learned from an experienced hand.

ADDITIONAL STUDIOS & FACILITIES

AM STUDIO

WMUH-AM is a carrier-current station that broadcasts on campus at 640 AM through cable and low wattage transmitters. The AM Studio is the basic training facility for students interested in becoming a member of the FM Staff. Under the current set-up, the carrier current is used to simulcast FM programming when the AM Studio is not on the air.

The AM Studio's equipment is similar to and, in some cases, the same as the equipment in the FM Studio. The Control Board is an LPB 8-channel console. The major difference between the AM and FM boards is that the on-air (P-1) switches are placed to the right on the AM board instead of the left. The channels are all clearly marked and operations are otherwise the same as the FM console. (See FM Studio for equipment operations).

To operate on 640 AM from the AM Studio, the switch on the remote transmitter rack in the FM Studio must be turned from "FM Simulcast" to the "AM" position. The operator for an AM program must return the switch to the "FM" position if there is no AM program scheduled after his or her shift.

PRODUCTION ROOM

The Production Room has nearly the same equipment as the FM Studio. In addition to an LPB Signature III Control Board, the Production Room is equipped with two turntables, a cart machine, a Tascam 122 cassette deck, an Electrovox RE-20, and inputs for additional microphones (the microphone input panel is located in the console table facing the door).

The Production Room is intended solely for production and training purposes and may be reserved for such uses on a first-come basis. You also may use the AM

Studio for producing tapes for on-air use and for previewing albums and other materials for your programs, but only if the Production Room is occupied. To reserve the Production Room, place your name on the sign-up sheet posted on the door. Only authorized staff members are allowed to operate equipment in the station's production facilities.

NEWS ROOM

The News Room is equipped with two microphones, a mic mixer/amplifier, and the capability for up to three additional mics.

1. Both the Mic Mixer and Audio Master must be in the On positions (as indicated by red lights) for the signal to be sent to the FM or AM Studio.
2. The News Room feed is on Pot-2 on the FM Control Board and on Pot-7 on the AM board.
3. A headphone plug and volume control is mounted on the news desk under the mixer.

Mic Mixer & Audio Master

The Mic Mixer, at the far end of the news desk, has an individual volume control for each mic input (Mic 1-5) and a Master volume control on the far right. The unit above the mixer, the Audio Master, controls the volume for the combination of all mic inputs, plus overall tone settings for low cut, bass, treble and high cut. Both the Mixer and Master are equipped with VU-meters. As with meters on other equipment, the sound level should be in the 80-100 range with only the highest peaks registering into the red area above 100.

Setting Mic Levels

The Audio Master's volume control can usually be pre-set to the black marks on the face of the control panel, although adjustments may be necessary on the Mic Mixer to fine tune the sound quality. If you have an extra person to help engineer your show, a good way to set your sound levels (and to put your guests at ease) is to do a pre-interview conversation. Encourage your guests to speak as they will during the program. Your engineer should position the mics within 18 inches of each subject's mouth and then preview the sound quality over Pot-7 in the AM studio, making any necessary adjustments for volume, tone or mic position. Before going on the air, be sure to instruct your guests to avoid touching the microphones or tapping the top of the table during the interview.

RED DOOR CAFE

The Red Door Cafe is equipped with a full range of audio and visual equipment, including turntables, a cassette player, a control console with mixer and equalizer, a sound reinforcement system, and a VHS video cassette player. Many of these inputs are tied into the FM Control Board for live broadcasts of

concerts, record parties, readings, and other activities. Requests for the use of the Red Door Cafe for WMUH-related events should be submitted in writing to the station's General Manager.

GENERAL STUDIO INFORMATION

Security

For the safety of our operators and the security of our equipment and other property, it is important that staff members follow certain security procedures:

1. The outside double glass doors leading to the basement of Seeger's Union must be kept closed and locked at all times. Anyone desiring entrance must push the button to the left of the doors, activating the light in the corner above the FM Control Board. When free to do so, the operator on duty is required to see who is at the door and must allow them entrance if they are authorized to be in the studio.
2. The operator on duty may require visitors seeking entrance to the studio to produce identification and state their reasons for being there. Do not open the outside door if you are alone in the studio and have reason to doubt a visitor's credentials or intentions. Ask the visitor for the name of a staff member or officer who can be called for verification or call Security for assistance (see numbers below).
3. The door to the basement hallway also may be locked, though it is often kept open during daytime operations. However, it is advisable to keep this door locked at night.
4. The operator on duty is responsible for the safekeeping of all station property and may be held liable for any damage or theft that occurs during the assigned shift.
5. If you encounter problems with guests or unauthorized visitors, Security can be contacted at 3110 on the 821- line or by dialing 433-8880 on the other line (the 433-5957 phone). Security should also be called immediately if a bomb threat is received from a caller during your shift.

Guest Policies

Having guests in the radio station is discouraged. A primary reason is that they often cause distractions that can interfere with your ability to keep your program on track. Also, it is not easy to control the behavior of guests while doing a program. Besides the possibility of damage to station property, remarks made by your guests could offend listeners or could jeopardize your license (and the station's). While a "party" ambience may be the effect you desire for your program, what usually results is "Romper Room Radio," an annoyance to listeners because it detracts from their reason for tuning in---to hear music. To avoid these problems, the following rules must be observed:

1. Only the operator on duty is permitted to operate control room equipment.
2. Staff members not on duty are permitted in the station for "legitimate" production work in other studios. As the operator on duty, however, you are allowed to ask for identification to determine whether someone is a staff member and may question their reasons for being in the station.
3. The operator on duty has the right to order anyone to leave the station whose activities are disruptive to the program in progress or whose behavior poses a threat to station property.
4. Between the hours of 10 p.m. and 8 a.m., no more than two guests are allowed in the studio. If you wish to have more than two guests, you must provide the station office with your guests' names, addresses and telephone numbers in advance. This information will be then be passed on to the college's Security staff, which visits the studio during its patrols of the campus.

Housekeeping

Dust, dirt and liquids can render solid state equipment inoperable. For this reason, it is very important that the station be kept clean at all times and that you observe the following:

1. Food is not permitted in any of the station's production areas.
2. Refreshments should be kept to a minimum. Never set a drink where it might spill on equipment or albums.
3. The operator on duty is responsible for filing all albums and clearing consoles and other areas of papers, cups, etc., after completing a shift.

Although the college's custodial staff takes care of general housekeeping duties, we urge you to help keep the place clean by emptying waste cans that are filled, by filing albums that have been left out, or by pitching in wherever you can to assure a professional atmosphere for our radio activities.

Alcoholic Beverages

College policy prohibits the unauthorized use of alcoholic beverages on campus. It is also a violation of FCC law to have alcohol in a broadcast studio. Any staff member caught violating these regulations will be removed from the staff by the station's Board of Directors.

Smoking

Under current staff policy, smoking of tobacco products is permitted in the station. However, smoking could damage equipment and also poses fire hazards. Therefore, we ask that you keep smoking to a minimum in all of our production areas and that you clean ashtrays before leaving the studio. Please exercise extreme caution when smoking and when emptying ashtrays into trash receptacles.

FEDERAL COMMUNICATIONS COMMISSION

WMUH's broadcast license was granted to Muhlenberg College by the Federal Communications Commission, contingent upon various rules and regulations that must be followed by the station's operators. From the isolated perspective of the station's control room, it may seem as if these conditions are just words on paper. But in fact the FCC does enforce its policies, even such seemingly mundane requirements as the filing of logs and the timing of announcements of the station's call letters.

Periodically, FCC officials come to town to record the radio station's broadcasts. These inspectors note the content of programs, the times at which public service announcements are played, and other program elements. They then visit the station and request to see the license of the operator on duty and a copy of the station's license, which is posted on the meter rack in the FM Control Room.

The FCC officials can also be expected to examine the current program and transmitter logs. If they request any other station logs or files, you may tell them (and they expect this) that they should return during regular business hours to see the General Manager and Chief Engineer. Whether they ask for additional documents or not, immediately call the General Manager, who in turn will call the Chief Engineer to make arrangements to talk with the FCC officials.

Any infractions found by the FCC could result in fines, litigation, and depending upon the severity of the offenses, even jail terms or revocation of the station's license. Therefore, it is vitally important that operators know and fulfill their responsibilities. Several books on FCC rules and regulations are available for your review at the station's main office, along with additional resource materials. If you have any questions on these policies, feel free to ask the General Manager for clarification.

Basic Regulations

Only an expert in federal communications law could be expected to know everything about FCC policies. But the requirements that apply to routine daily operations are basically simple:

1. The person on duty must have a copy of his or her operator's license on file at the station. No one is permitted to operate a public broadcasting facility without the required license.
2. A legal station identification must be issued two times per hour---one on the hour and the other on the half-hour. These announcements should be issued between five minutes before and five minutes after the half-hour points. A legal I.D. must include the station call letters and city of license: WMUH---Allentown. Nothing else should be mentioned between these two words (for example, "WMUH-91.7 FM, Allentown" is incorrect). However, you may add other information before or after the required I.D.

3. All Program, Transmitter, and Emergency Broadcast System logs must be filled out properly. (See Appendix)
4. In regards to program content, the following are prohibited under FCC and other federal laws:
 - a. Obscene or Indecent Material. See separate discussion below.
 - b. Defamation or Slander. Defamation is a false spoken statement (slander) damaging the reputation or character of a person or group in the community. Other personal attacks should also be avoided because of the legal and financial implications to the licensee, the LVCBA, and the programmer.
 - c. Commercializing. Using a public educational broadcast frequency to promote a profit-making business or activity (except for authorized underwriting announcements) is illegal.
 - d. Lotteries. Broadcasting information promoting lotteries, other than state-operated contests, is a criminal offense.
 - e. Political Endorsements. A public radio station is not permitted to endorse political candidates or editorialize in favor of a particular political position.
 - f. Payola, Plugola and Conflicts of Interest. If you accept something of value in return for promoting a record or other product on the air, you could be guilty of Payola, a federal crime. Other conflicts of interest, such as using your air-time to promote a business in which you have a personal interest (known as plugola), could also be illegal and should be avoided.
 - g. Point to Point Communication, that is, a personal announcement intended for a specific individual or group, except in the case of emergencies. If you need to communicate something to a friend, use the telephone.
 - h. Broadcasting Laws. It is illegal to rebroadcast material recorded from another radio or TV station without written authorization.
 - i. Copyright Laws. This is another area that can confound even legal specialists. But in general there are two areas of concern:
 - 1) Printed Material. It is legal to read copyrighted material over the air under "fair use" provisions, as long as the reading does not interfere with the copyright holder's ability to sell the material. For example, reading excerpts of a novel, poem or play is permitted, while reading an entire work without the author's permission would be an infringement.
 - 2) Recorded Material. Most commercially recorded material may be played over the air, unless specifically stated on the label or album jacket. Bootleg records and other non-commercial recordings, however, may not be played without the artist's permission.

Should you have any questions on these or other subjects related to FCC rules, see the General Manager or other staff officers. The best policy is to ask before you act.

Operator's License

A restricted third class radiotelephone operator's license or permit is required for operating a broadcasting facility. To qualify for a license, you must be a U.S. citizen or a "resident alien" eligible for employment. You also must be at least 14 years of age and be able to read and understand the requirements of FCC form #753, copies of which are available from the Training Director. To obtain a license, fill out form #753 completely and accurately, and mail it to:

Federal Communications Commission
Box 1050
Gettysburg, PA 17325

The bottom third of the form is a temporary, 60-day permit, which you should retain (do not mail). This permit will serve as your license for up to 60 days while waiting for your FCC endorsed license to arrive. A photocopy of the temporary permit must be on file at the station in order for you to broadcast. Once you receive your permanent license, make a copy of it to replace your temporary permit in the station file.

Indecent and Obscene Material

The broadcasting of either indecent or obscene material is strictly regulated by the Federal Communications Commission. Basically, the difference between the two, as defined by the FCC, is that obscenity applies to subject matter that is sexually explicit, while indecency covers material that might be offensive but is not likely to appeal to someone's sexual drives. For example, the FCC generally regards sexual expletives by themselves as indecent but might consider the same words obscene if they were used to describe a couple's amorous activities at a drive-in theater.

Under recent rulings, the FCC is permitting the broadcast of indecent material between midnight and 6 a.m. if proper warnings are issued. WMUH policy, however, continues to prohibit the airing of such material, not only to protect the station's license but also to maintain the college's image in the local community. The following examples cover material the FCC considers to be in violation of its "indecency" standards:

1. Use of repeated expletives (e.g., George Carlin's "seven dirty words").
2. Descriptions of sexual encounters or excretory functions.
3. Sexual innuendo and double entendres in a context of sexual explicitness.

Meanwhile, FCC policy forbids broadcasting material regarded as obscene. The Commission's policy is based on a 1973 decision by the U.S. Supreme Court, defining obscenity as material which:

1. Appeals to the prurient interest of an average person.
2. Depicts or describes sexual conduct in a patently offensive way.
3. Lacks serious artistic, political or scientific value.

WMUH programmers are asked to sign a pledge stating that they will refrain from playing obscene or indecent material on the air. This is no laughing matter--- programmers violating this pledge could have their station privileges revoked permanently and, in the case of a FCC violation, could face fines of up to \$10,000 and imprisonment of up to 2 years per infraction.

EMERGENCY BROADCAST SYSTEM

The EBS enables the federal government to control broadcast media in the event of an emergency of local or national importance. All radio stations in the United States are equipped with EBS receivers. At WMUH, a McMartin EBS-2 receiver is located in the meter rack in the FM Control Room.

Test Announcements

On a periodic basis, the EBS sends out an announcement which can be heard over a small speaker inside the receiver. In the Lehigh Valley, the EBS sending station is WKAP-AM. The message sent out usually begins: "This is only a test of the Emergency Action Notification System...this is only a test..." Should you receive this announcement during your program, you are required to do the following:

1. Log the date and time of the transmission, as well as your name, on the EBS Log on the clipboard located on the side of the transmitter meter rack.
2. After the recorded announcement, there will be a test tone. At this point, you may push the RESET button on the receiver unit, which re-sets the equipment for the next message. If the RESET button fails to stop the test tone (and the transmission of WKAP programming that follows), you may re-set the equipment by turning it off and on quickly.

Actual Emergencies

Should the message not be a test, you must follow these procedures:

1. Do not re-set the EBS receiver. Allow it to play and listen for further instructions.
2. Pull out the red envelope attached to the EBS clipboard on the side of the meter rack. Listen for the code word noted on the envelope.
3. When you have confirmed that it is indeed an actual emergency and the codeword has been transmitted, open the envelope and carefully follow the instructions inside. Most likely, the instructions will require the station

to go off the air so that "clear channel" stations can increase their power. You might also be required to inform your listeners that a state of the emergency is in effect and that they should tune to a designated frequency.

4. If you receive a bona fide emergency announcement, contact the General Manager immediately for further direction.

Whatever the instructions, be sure to follow them completely and explicitly. So listen closely.

Weekly EBS Tests

Once a week, between sunrise and sunset, WMUH is required to test its EBS readiness. These tests must be done at random, and therefore any operator could be asked to perform the required test during a daylight program. The procedure is as follows:

1. Insert the EBS Test cart in the cart machine. Place the control switch for Pot-5 into P-1 (to the left), turn up the volume control to the same level you use for other recorded material. Then press the cart machine's Start button at the desired time.
2. After the first half of the cart announcement has played, the tape will automatically stop. You must then activate the McMartin TB-2 test tone generator, located below the EBS receiver in the meter rack, by pressing the Start button under the unit's door. This will provide a 15-second tone that will automatically play over the air.
3. After the tone stops, press the Start button on the cart machine. The second half of the EBS Test message will then play over the air, providing the closing announcement for the test.
4. After completing the above procedures, log the date and time of the test on the program log. You may then continue with your program.

TIPS & TRAPS ON DOING RADIO

You can add to your experience by approaching radio with the attitude that broadcasting, like anything else worth doing, is worth doing well. With this in mind, we offer the following as examples of techniques we hope you'll emulate ---some of the traps we suggest you avoid.

Your Program

- . There are rules. And there are no rules. Relax. Enjoy your program. That's the point.
- . Listen to your radio station. Start a notebook for ideas, praise, criticism. Share what you learn with others.
- . Listen to other stations. Learn from their successes and failures. Above all, try not to sound like "them" in what you play or how you announce.
- . Prepare in advance, but don't over-plan. Spontaneity can add life to a show. Doing everything by script could be boring---to you and the audience.
- . Think about what is going out over the air. Does it flow? What if you heard "this" coming out of your radio?
- . Stay ahead of yourself while on the air, three to four steps if possible. Have records cued. Know what you want to play next. Keep a cart ready to cover disasters. Avoid dead air.
- . Create interest in your program by providing background on selections. Note the relationship between songs. Keep comments brief but informative.
- . Bring in reading materials and work parts into your show. Don't attempt longer pieces until you get the hang of making short ones seem natural.
- . When possible, try to honor requests. But if a request doesn't fit, decline to play it. Politely.
- . Tape your shows. Or have someone tape for you. Then listen to the tapes later. Seek feedback from friends. Learning is part of the fun.

Your Music

- . Listen to as much new material as you can. The more music you know, the more resources you'll have for doing programs.
- . Be creative. Build sets around themes, styles, rhythms, moods, contrasts, time periods, origins, and however many other concepts you can come up with. The trick is to make connections whenever you can.
- . Keep your shows fresh: Don't play the same selections week after week. Be receptive to material you previously regarded unfavorably.
- . Avoid limiting yourself to selections you've "heard of." Your listeners probably have heard them too and that's why they're listening to WMUH.
- . Know your material. Read album covers, magazines and books for background. At the very least, learn the pronunciation of names, album titles, etc.
- . Never "trash" a song you've just played. Critical comments, perhaps. But if it's so bad, why play it in the first place?
- . Respect all music. Never yank the needle in the middle of a song. Don't put down someone else's tastes in order to praise your own. Let your program speak for itself.
- . Review other playlists. Adapt but don't steal ideas. And don't use the same techniques over and over. Repetition is boring. Repetition is boring.

Your Announcing

- . Generally, the best way to announce is in a conversational tone. Pretend your listeners are in the room with you. Talk to them.
- . Let listeners know what you've played. Vary how you "back sell" songs. Maintain legible playlists so you---and later, others---can read them.
- . Jot down notes and write out bits. Ad libbing is great when you're "on," but even the pros rely on crib sheets in a pinch.
- . Before opening the mike, practice reading PSA's, artists' names, etc.
- . Watch your diction. Avoid slurring words, popping "p's," sing-song delivery, "uhs" and "anyways," slang, grammatical errors, and other faux pas.
- . Never "flag" a PSA or other announcement: "Now I'm going to read a PSA..." Why risk losing listeners? Besides, people have no idea what a "PSA" is.
- . When giving the time, don't say "it's now twenty of the hour." Instead, give the full time: "10:35," "twenty minutes after two," or "five o'clock."
- . When announcing the station's call letters, pronounce the first letter as "double-you" or "dub-a-you" not as "dub-a-ya" or "dub-ya." Be kind to the other letters as well.
- . Remember who's helping to pay for all this. Mention Muhlenberg College as part of ID's: "From the campus of..." "Broadcasting from..." Etc.
- . Give full credit to the LVCBA. Use the complete name, not just the initials unless you provide the name first. And without overdoing it (watch the hype), inform people on the purposes and goals of community radio.

Your Listeners

- . Keep in mind that your first and foremost responsibility is to your listeners and that your audience encompasses people from all walks of life.
- . Never underestimate your listeners' intelligence. And never overestimate their knowledge. Don't talk down to people. But take little for granted.
- . Refrain from making remarks that could be considered racist, sexist or otherwise offensive. Keep your political and religious views to yourself.
- . If you don't have something to say that adds to what you're doing, don't say it. Avoid radio jargon, inside jokes and your personal history.
- . Build and retain listenership by using "teasers": "Coming up in a moment, a selection of rare acoustical pieces..." But be sure to fulfill your promises.
- . If possible, maintain the hold-over audience by starting with a piece compatible with the last show. Avoid jolting transitions or offending listeners with: "Enough long-haired stuff---now some kick-ass rock..."
- . Try to buffer shows with an announcement on cart. Don't just appear on the air when the piece from last show ends. And when closing out your show, be sure to mention what's ahead.
- . Never tell listeners what you don't know: "I don't know who's up next." "I forget who did that song originally." And other uninformative gems.
- . Bury your errors. Apologies only call attention to them. Besides, listeners either are very forgiving, may not notice or don't care to hear about it.

Your Equipment

- . Learn how to operate a piece of equipment before attempting to use it. Ask more experienced operators for advice. Read your training manual.
- . Don't limit yourself to two turntables and the microphone. The more sources you have at your disposal, the better.
- . When contemplating a difficult mix, a quick cue, or other complex moves, practice the sequence of events ahead of time. And if you're still unsure about pulling it off, consider abandoning---rather than sinking---the ship.
- . If you must un-plug equipment to hook up an additional player, be sure to return the patch cords to their original positions.
- . If something's broke, don't try to fix it. Instead, report equipment problems to the General Manager or Engineer. And do it ASAP.

Your Albums

- . Treat albums with care. Keep fingers off the surface. Clean records before playing them, even new ones.
- . Develop a system for returning albums to their proper place. You'll appreciate it when your show is over and filing takes but a few minutes. Other programmers will appreciate it too when albums are where they belong.
- . Don't leave albums laying around, even if someone else left them there.
- . If a record you've played doesn't have an inner sleeve, get one for it from the extra supply in the studio.
- . Treat album covers with care. Never jam albums into a rack.
- . Have a few minutes to spare? Consider spending some time re-alphabetizing a section of the library. Not only will you be helping "the cause," but you're sure to uncover some of the library's hidden treasures.

Your Responsibilities

- . You must have a valid third class radiotelephone operator's permit. A copy of your license must be on file with the radio station.
- . Only authorized, licensed personnel are permitted to operate equipment.
- . All logs must be filled out completely and accurately (see Appendix).
- . Legal ID's are required twice per hour---between five minutes before and five minutes after each half hour. The proper form: "WMUH---Allentown," with nothing between the two elements. You may add info before or after the ID.
- . The broadcast of obscene or indecent material is verboten.
- . Commercializing, politicizing, and making personal attacks are prohibited on educational broadcast stations. Guests on public affairs programs are permitted to state their political views, but it must be made clear at the start and end of the show that these are not the views of the radio station.
- . PSA's are required twice per hour, about fifteen minutes after and fifteen minutes before the hour. When reading PSA's, concert announcements, etc., remember you are merely providing information, not promoting the event or service in question. Do not give out price information on the air.
- . If you are unable to be there for your show, it is your responsibility to find an authorized replacement. Don't expect others to find a substitute for you. And if you can't avoid being late for a show, be sure to call the person who is on before you to let them know.

Your Studio

- . Look at your walls. Signs and notices aren't put there just for decoration.
- . Clear out the clutter before the next programmer goes on. Throw away paper, cups, etc. Empty ashtrays and dump waste baskets. Neatness may be the sign of a diseased mind, but orderliness is the first sign of a professional one.
- . Observe all rules. Your safety and station privileges depend on it.

Your Art

"The art of radio is the theatre of it...the drama of it."

"Radio was put on Earth to make art."

---David Ossman, Pennsylvania Radio Theatre Workshop,
Center for the Arts, Muhlenberg College, 1987

There is no easy formula for doing radio. Like most art forms, broadcasting is a craft involving many technical skills. But the difference between craftsmanship and artistry is one of creativity. In order to create programs that transcend the sum of their parts, a programmer must develop his or her intelligence and imagination as well as the required technical skills.

Even doing programs of recorded music can be an art if approached properly. Just consider all the elements involved: the selection and juxtaposition of material, the infinity of potential themes, the numerous mixing techniques, the use of the voice and microphone, the possibilities of incorporating music and sound effects as background, etc. Certainly not all of these are appropriate to every program; for example, talking over top of the musical intro to a record is alright for a piece by Little Richard but not for a waltz by Richard Strauss. Nonetheless, even the most "straight laced" music program offers opportunities for realizing broadcasting's potential as a performing art.

You are encouraged to test the parameters of this exciting medium and to learn all that you can to become an accomplished broadcaster. From time to time, we will be adding material to this manual and will be offering advanced training to provide you with more ideas and direction. In turn, we hope you will share the expertise you develop to help us teach others. For now, we will leave you with two more clues from the creators of Firesign Theatre:

"The start of every radio show is a mystery."

---Peter Bergman's 1st Law of Radio

"Any moment in a radio show up to a certain point is the beginning."

---David Ossman's Corollary to Bergman's Law

APPENDIX A: LOGS

PROGRAM LOGS

Program Logs are required by the FCC to document that the radio station and the operator on duty have fulfilled their legal obligations. Operators are expected to fill out the following information completely and accurately:

1. Sign On. This should include the time, the words "Sign On" and the operator's signature:

6:00 a.m. Sign On John Hancock

2. Legal ID. A required announcement of the station's call letters and city of origin. These notations should include the time and an indication of whether the ID was live or taped. The proper notations:

2:03 Live ID

3:57 Taped ID: Classical Music Promo

- a. A "legal" ID must be issued between five minutes of or five minutes after the hour and half-hour.
 - b. The proper form of an ID is "WMUH---Allentown" with no information included between the call letters and city of origin.
3. Public Service Announcements. These notations should include the time of the announcement, whether it was live or taped, and the subject matter:

4:14 p.m. Live PSA: Prevent Child Abuse

5:46 a.m. Taped PSA: March of Dimes

- a. Two PSA's are required per hour, one at quarter after the hour and another at quarter of the hour. As with ID's, five minutes' leeway is permitted on either side of these recommended times.
 - b. Additional PSA's also must be logged, using the above form.
4. Underwriting Announcements. The notation form for these announcements is similar to PSA's:

5:02 p.m. Live Underwriting Announcement: Tom's Diner

4. Emergency Broadcast System Tests. See Appendix that follows.
5. Sign Off. Operator's are required to include the time of the sign off, their signature and the phrase "Log correct as amended":

8:00 a.m. Sign Off John Hancock

Log correct as amended

All notations on the Program Log are to be done in black or blue ink (not pencil). Should you wish to correct an item, draw a single line through the incorrect notation, and write your initials and the date next to it.